

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (currently amended) A method for making a custom-fit palatal arch expander for a patient, the method comprising:
  - acquiring at least one digital scan representing at least a portion of upper teeth and a palate of the patient;  
providing an electronically viewable treatment plan by an appliance provider based on the at least one digital scan, the treatment plan including the use of a custom fit palatal arch expander;  
making the electronically viewable treatment plan available to a treating professional for review;  
fabricating a first portion of the custom-fit palatal arch expander, the first portion having a plurality of cavities for receiving posterior teeth on one side of the palate and a palatal portion extending toward a centerline of the palate;
  - fabricating a second portion of the arch expander, the second portion having a plurality of cavities for receiving posterior teeth on an opposite side of the palate and a palatal portion extending toward the centerline of the palate; and
  - coupling an expansion member between the first and second portions, wherein each of the plurality of cavities is specifically configured to fit over one of the posterior teeth of the patient, based on the shapes of the posterior teeth as represented in the digital scan(s).
2. (previously amended) The method of claim 1, further comprising adjusting the expansion member to vary the spacing between the first and second portions.

3. (previously amended) The method of claim 1, wherein the expansion member comprises one or more screws.
  4. (previously amended) The method of claim 1, wherein the expansion member comprises one or more springs.
  5. (original) The method of claim 1, wherein the first and second portions comprise super-elastic nitinol.
  6. (previously amended) The method of claim 1, wherein the first and second portions are fabricated using stereolithography, fused deposition modeling, 3-D printing, or selective laser sintering.
  7. (previously amended) The method of claim 1, wherein acquiring the at least one scan comprises intra-oral scanning.
  8. (previously amended) The method of claim 1, wherein acquiring the at least one scan comprises:
    - taking an impression of the patient's teeth;
    - placing the impression in a scanner; and
    - generating a 3D model of the impression.
- 9-21. (canceled)
22. (currently amended) A method for expanding a palatal arch of a patient, the method comprising:
    - acquiring at least one digital scan representing at least a portion of upper teeth and a palate of the patient;
    - providing an electronically viewable treatment plan by an appliance provider based on the at least one digital scan, the treatment plan including the use of a custom fit palatal arch expander;
    - making the electronically viewable treatment plan available to a treating professional for review;

fabricating, based on the scan(s), a custom-fit arch expander for the patient, the arch expander comprising:

a first portion having a plurality of cavities for receiving posterior teeth on one side of the palate and a palatal portion extending toward a centerline of the palate;

a second portion having a plurality of cavities for receiving posterior teeth on an opposite side of the palate and a palatal portion extending toward the centerline of the palate; and

coupling an expansion member between the first and second portions, wherein each of the plurality of cavities is specifically configured to fit over one of the posterior teeth of the patient, based on the shapes of the posterior teeth as represented in the digital scan(s); and

placing the arch expanded in the patient's mouth to expand the patient's palatal arch.

23. (New) The method of claim 1, further comprising the steps of reviewing and approving the electronically viewable treatment plan by the treating professional before the fabricating steps.
24. (New) The method of claim 1, wherein the step of making the electronically viewable treatment plan available comprises allowing the treating professional to view a three-dimensional model of the patient's teeth.
25. (New) The method of claim 24, wherein data associated with the three-dimensional model is compressed.
26. (New) The method of claim 1, wherein the step of making the electronically viewable treatment plan available comprises allowing the treating professional to view an animation showing a movement of teeth according to the treatment plan.
27. (New) The method of claim 1, further comprising the step of allowing the treating professional to electronically edit the treatment plan.

28. (New) The method of claim 27, further comprising the step of providing the treating professional with an automated teeth collision detection tool.
29. (New) The method of claim 8, wherein the taking of an impression of the patient's teeth is done by the treating professional, and the placing of the impression in a scanner and the generating a 3D model of the impression are done by the appliance provider.
30. (New) The method of claim 22, further comprising the steps of reviewing and approving the electronically viewable treatment plan by the treating professional before the fabricating steps.
31. (New) The method of claim 22, wherein the step of making the electronically viewable treatment plan available comprises allowing the treating professional to view a three-dimensional model of the patient's teeth.
32. (New) The method of claim 22, wherein the step of making the electronically viewable treatment plan available comprises allowing the treating professional to view an animation showing a movement of teeth according to the treatment plan.
33. (New) The method of claim 22, further comprising the step of allowing the treating professional to electronically edit the treatment plan.